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NAVAL POSTGRADUATE SCHOOL MONTEREY, CALIFORNIA



THESIS

**CAPITATION BASE RESOURCE ALLOCATION:
DOES IT PROVIDE THE NECESSARY
FINANCIAL INCENTIVES FOR THE MTF TO
ACHIEVE TECHNICAL AND ALLOCATIVE
EFFICIENCY?**

by

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December, 1995

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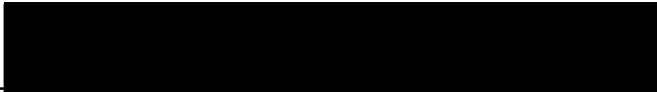
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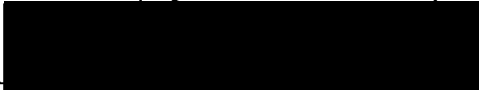
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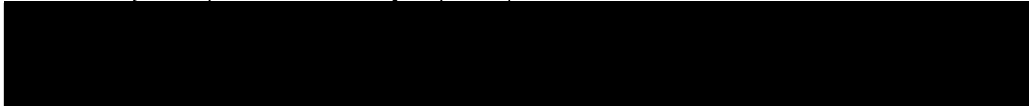
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I. INTRODUCTION

This chapter describes the history of military medicine. It addresses DoD's position on military health care, the Navy's general medical mission, and the purpose and impact of Lead Agents on military health care. The chapter concludes by discussing managed competition and capitation.

A. BACKGROUND

The health care system in today's economy is in crisis, facing political and social pressure to reduce its increasing costs. As the non-discretionary portion of the nation's budget grows (in part due to the increased cost of Medicare and Medicaid), Congress searches for cuts in discretionary spending to help limit the magnitude of the budget deficit. Military spending has become the political target of choice for some of those cuts. All military departments, including health care, are increasingly asked to do more with less to gain greater value for the dollar.

Pressure to reorganize military health care has been feverishly debated in the House and Senate since the late 1980's. In Fiscal Year (FY) 1990, the House Appropriation Committee Report on the Defense Authorization Act recommended that the Department of Defense (DoD) place one person in charge of military medicine. The Senate rejected that recommendation and ordered DoD to submit a centralized plan to revamp medical programs (Lanier & Boone, 1993). This plan would be later know as the "733 Study."

More pressure came to bear in March of 1995 when Mr. Neil M. Singer (Deputy Assistant Director, National Security Division, Congressional Budget Office) delivered testimony before the House Subcommittee on Military Personnel. He stated that the Military Health Service System (MHSS) had more than twice the beds and medical staff necessary to treat war time casualties.

Following the debates of the 1980's, the military health care departments, under direction from the Office of the Assistant Secretary of Defense for Health Affairs (OASD(HA)), here after referred to as Health Affairs, changed their methodology in funding their Medical Treatment Facilities (MTF). The old methodology of funding at historical costs and workload trend factors is gone. According to a DoD concept paper (1993), a more economic approach to health care will follow - capitation.

Capitation simply pays medical providers a fixed rate for a group of individuals contracted for care (Sorkin, 1986). Theoretically, an individual MTF can operate at a profit or loss, depending on how efficiently it provides care. For the MTF, there is no longer an incentive to "inappropriately increase the number of services or to provide more costly care than is clinically necessary" (DoD Concept Paper, 1993).

B. RESEARCH QUESTIONS

This paper will study the effect capitation will have on the MTFs. Specifically, what incentives do MTF Commanders have to increase effectiveness and efficiency under a capitated system? To answer this primary question, four subsidiary research questions will be addressed:

- (1) If the Commander determines it is more cost effective to contract out, how can this be done mid-year?
- (2) How would the Bid Price Adjustment formula factor into this decision?
- (3) How is the capitated rate for MTFs determined?
- (4) How do Commanders of MTFs determine the proper mix of services to provide to maximize the value to patients while maintaining the quality of care and operating within the capitation constraint?

C. LITERATURE REVIEW AND METHODOLOGY

This research will investigate the effects capitation will have on the Military Treatment Facility. A focus on the incentives and disincentives with respect to financial risk will be reviewed.

Working papers from DoD, Health Affairs, and Bureau of Medicine and Surgery (BUMED) as well as other related health care publications will be reviewed for areas relating to capitation based resourcing and managed care. Also, key personnel involved in capitation from BUMED and Health Affairs will be interviewed to determine DoD's definition of capitation and the methodology it will follow. This establishes the parameters by which each Service will operate. Interviews also help provide current financial data on MTF performance under capitation.

D. DELIMITATION

This thesis will study the effect capitation will have on the MTFs. Specifically, how capitation is supposed to work (in the marketplace); how the Bureau of Medicine and Surgery (BUMED) plans to use capitation as a means to control costs, how the

capitated rate for MTFs are determined, and the effects these systems have on incentives and market forces.

Capitation based resourcing is in its early stages of implementation in DoD. Thus, the only financial data to evaluate is from FY 94. The effects made by gatekeepers on the readiness of active duty members and the wellness of eligible beneficiaries in the future can only be speculated based on results of this small amount of financial data and comparisons of DoD's capitation model to private capitated HMO models. All forecasting and simulation trials are conducted using DoD's or MTF data.

Health Affairs capitated model as of 31 August 1995 will be used for this study. Any changes made to the model or to the capitated formula after 31 August will not be used for analysis in this study. However, the researcher will inform the reader by acknowledging any changes that have occurred after this date.

E. MILITARY MEDICINE

In order to fully understand the positive and negative effects capitation can have on military medicine, the military medical structure must be explained. The Military Health Service System is chaired by the Assistant Secretary of Defense (Health Affairs) (ASD(HA)). ASD (HA) is the program manager for all DoD health affairs activities. However, the current operating framework has four separate health care departments: Army, Navy, Air Force and the Office of Civilian Health and Medical Program of the Uniform Services (OCHAMPUS). The latter is managed by ASD (HA).

With the rise and fall of unit costing, the Military Medical Departments are now focusing on capitation. The Assistant Secretary of Defense for Health Affairs defines the

mission of the MHSS as providing and promoting "quality of care services for military personnel, their families and other beneficiaries during peace and war". As with the private sector, the military is facing an unprecedented rise in medical costs, which are reflected in the services' budgets. Reasons for increased costs stem from new technologies, increased cost per unit of medical labor, new medical standards, increased utilization and inflation.

Historically, the MTFs were retrospectively reimbursed for services. Simply stated, hospitals were rewarded for the amount of workload produced. This creates an incentive to provide additional services without fully considering necessity of the service provided. This creates a disincentive for efficient use of resources. With the shrinking of defense dollars and the rise of medical expenditures, DoD is now focusing on capitation as the funding methodology of the future.

Capitation in BUMED is a prospective payment system which pays MTFs an up front fixed fee to treat eligible patients in their catchment area during a specific period of time (monthly, quarterly, etc.). In contrast, Health Affairs pays an up front fixed fee based on users of the system and not eligibles. The catchment area is defined as a 40 mile radius around the MTF. The method in which the capitation rate is determine will be discussed in Chapter III. Under a true capitation model, the Commander would assume the responsibility (risk) for providing health services to the catchment area. To assist in the responsibility, DoD created twelve Lead Agent's. This encourages the Commander and Lead Agent to insure that the services provided are clinically appropriate. Eastaugh (1992) states that the competitive model of capitation helps motivate insurance companies,

providers, and all those involved in delivering health care to "find the means to provide lower cost" (pp. 127).

1. Navy's Medical Mission

The Research and Analysis Department (MED 32), in a paper presented to the Navy Surgeon General, described the unique characteristics of Navy medical personnel as personnel who provide medical support to active duty forces by going wherever they go. From Fleet Hospitals, ships, submarines, field units, clinics and hospitals, Navy medical personnel accompany sailors and marines all over the world. Because MHSS must be prepared to operate in every corner of the world, both the mission and the platform for delivering care is different than the civilian health care system.

Navy medicine is a layered organization which is simultaneously trying to meet three missions. These missions are defined by LT Weber in the September-October issue of *Navy Medicine* (1994) as: (1) wartime mission, (2) Day-to-Day operational support mission, and (3) peacetime health benefit mission. All three missions are vital to the success of the Navy Medical Department. However, this study will focus on the latter mission.

2. Lead Agent

In 1993, DoD created 12 Health Service Regions (HSRs) and placed a single MTF Commander in charge of each region - known as the Lead Agent. The Lead Agent does not necessarily have the same Service affiliation as the MTFs in the region. Due to this fact, the Lead Agent's responsibilities can be unique for a particular region. Not all Lead

Agent's have the same standardized responsibilities. However, the general purpose of the Health Service Region concept is the same in all regions.

a. Purpose

Lead Agents were designed to establish a single organization to coordinate managed care and referral services in their region, and to establish an integrated health care network for MHSS beneficiaries (Lamar, 1994).

b. Practice

As mentioned above, Lead Agents have only been in existence since Fiscal Year 1994. Lead Agents are coordinators who attempt to ensure that MTFs in their region seek the most economical and efficient care possible. For capitation, these Health Service Regions (HSRs) can provide a single risk pool and stop loss protection which will assist those Commanders who have unexpected lengths of stay, users of the system, and interservice transfers. However, Lead Agents are only as effective as the Services allow them to be.

Lead Agents are a critical success factor for the MTFs. Since the Lead Agent controls and coordinates the managed care contracts in the region, the MTF has an incentive to develop a working relationship.

Although the Lead Agents coordinate care in their region, individual Services retain control over their share of the managed care funds. Lead Agents provide the means to assist the MTF in achieving allocative efficiency. (The concept of allocative efficiency is discussed in Chapter IV.)

F. MANAGED CARE (COMPETITION) IN RELATION TO THE MHSS

1. Definition

According to Enthoven (1993), the purpose of managed competition is to "redesign and restructure" markets to create price-elastic demand. Price elastic demand creates the necessary incentives for health providers to cut prices and costs. Enthoven goes on to state that with managed competition there is an annual enrollment, which is one intervention the market can use to move from inelastic to elastic demand. Currently the MTFs do not have annual enrollments.

For managed competition to work in a capitated environment, all providers at the MTF must change the manner in which they practice medicine to greatly improve efficiency. This, however, does not imply delivering substandard care.

For any health care organization to succeed with capitation including BUMED, the managed competition framework and practices need to be instilled in all health care workers. To illustrate this point, Johnson (1994) states, for every hospital that is successful with capitation in a network, two are not successful, then the network will not capture the desired savings (Johnson, 1994).

G. CHAPTER OUTLINE

This chapter provided a conceptual framework of military and Navy medicine and those reasons why Military Health Service System has chosen capitation as their primary method of resource financing.

The next chapter contains a literature review on the theory of capitation and the incentives and disincentives it creates in the market place. It will also address those events

which paved the road for changing from a predominately fee-for-service to an integrated capitated managed care philosophy.

Chapter III will address the purpose and individual components of Health Affairs capitated model and subsequently the model BUMED follows. Since information systems are key to financial viability in a capitated system, the information systems which support these various components will also be discussed.

Chapter IV discusses the impact BUMED's capitated model could have on the MTF. The four research questions presented earlier in this Chapter are discussed. Other topics addressed are the concept of profits, technical and allocative efficiency, and quality of care.

Chapter V concludes this research paper by summarizing the impact BUMED's capitated model can have on the MTF.

II. LITERATURE REVIEW

Capitation is not a new theory in the academic arena, however it is in the early stages of development in the active practices of health care organizations. Capitation has gained ground and substance in the past ten years. For a historical perspective, this chapter will address those events which paved the road for changing from a predominately fee-for-service industry to an integrated capitated managed care philosophy.

A. MOVEMENT AWAY FROM FEE-FOR-SERVICE

1. Prospective Rate Setting

a. Definition

Prospective rate setting (PRS) is defined by Dowling (1980) as a:

cost containment strategy wherein an external authority establishes the prices that providers are allowed to charge and/or that third parties are required to pay for specified services in advance of the period in which the services are actually provided (pp. 61).

Under a prospective system, providers are not paid on their actual costs, nor are they allowed to unilaterally change their charges, rather they are paid a fixed fee in advance to provide comprehensive health care services. The fixed rates are established for a given period. The constraint on revenue imposed by fixing payments causes the providers to become more conscious of cost. This system is designed with containment as its primary objective.

Dowling (1980) further reports that the PRS is designed to introduce market-like financial incentives into the provider sector. He describes the key characteristics of a PRS as:

- (1) An external authority is empowered to establish rates
- (2) Rates are set in advance of the prospective year
- (3) Patients pay the prospective rate and not the actual cost
- (4) Providers are at risk of losses and surpluses.

b. Requirements for Hospital Success

Dowling (1980) describes three requirements for hospitals to be successful under PRS which then helps hospitals to be better managed. The requirements are:

- (1) Better budgeting practices
- (2) Capital and program planning
- (3) Cost analysis and cost control techniques.

(1) Better Budgeting Practices. The first requirement Dowling (1980) described for hospital management is better budgeting practices. Those hospitals which are able to measure and control true operational cost, through proactive budgeting, are those which will survive under this system (Dowling, 1980). Since prospective rates are generally based on a budget review, hospitals must accurately budget and justify their anticipated expenditures for the coming year. For hospitals which use formulas to determine rates, effective budgeting is fundamental to audits and end of year reviews.

Cerne (1994) also shares this view and suggests "that one financial advantage ... is a clearer income pool for budgeting purposes" (pp.29). Since hospitals are paid up front, they can allocate funds based on the perceived needs of their population. However, this factor becomes more complicated if there is an unstable population in the catchment area.

(2) Capital and Program Planning. Capital and program planning are the second advantage to prospective rate setting. For a hospital to accurately reflect and demonstrate the need for any new facility, service, or equipment, its ability to program and plan becomes essential. This criteria can be used as the basis for decisions regarding how much growth and development the hospital must undergo to accumulate the necessary capital reserves needed for long ranges plans.

(3) Cost Analysis and Control Technique. Cost analysis and cost control technique are the last advantage Dowling described. After gaining better budgeting practices along with capital and program planning, management must be able to analyze the data obtained from these two methods. Understanding the cost implications, quality, and intensity of services offered are only a few of the measures necessary for cost analysis. Mastering this technique allows the hospital to adjust to changes in the market and subsequently to be at the forefront of health care delivery. Tightening financial constraints make it essential not only to recognize but act on cost implications for everything "from productivity and purchasing to case mix of patients" (Dowling, 1980, pp. 65).

2. Medicare and Medicaid

A discussion on capitation would not be complete without mentioning briefly the impact Medicare and Medicaid has had on the health care market. Pogue (1994) stated that Medicare and Medicaid covered a major segment of the population that had no health care before 1966. This introduced a guaranteed payer (the government) into the health care industry and increased the number of services provided by physicians. In the initial system, hospitals and physicians were paid the amount they reported and claimed. Because Medicare and Medicaid covered the heaviest system users, hospitals and physicians had no incentive to restrain their cost. To finance expansion and new technology, the early years of Medicare and Medicaid were a financial paradise to the providers of health care.

a. Diagnostic Related Groups

In 1982, the apparent gross misuse and accelerating Medicare cost led to the Tax Equity and Fiscal Responsibility Act (TEFRA) (Jonas, 1986). This Act established a new payment methodology, developed at Yale University, called diagnostic related groups or DRGs. DRGs established a flat fee per case for each diagnostic category. This new Act was designed to provide incentives for cost containment which regulators believed would reduce length of stay. However, "hospitals were incentivized to increase admissions anyway they could and managed case mix to maximize DRG reimbursement" (Pogue, 1994, pp. 1).

b. Resource Based Relative Value Scale

In the early 1990's, Medicare shifted to a new cost structure - Resource Based Relative Value Scale (RBRVS). This new methodology came closer to containing cost. RBRVS was created at Harvard University by William Hsaio, Ph.D. and adopted by the Health Care Financing Administration (HCFA) in 1992 as a means for physician payment reform (Hagland, 1991).

RBRVS became the official payment schedule in the Omnibus Budget Reconciliation Act of 1989, when President Bush instituted RBRVS as the means of Medicare Part B reimbursement (Hagland, 1991). The intent behind the new payment mechanism was to raise reimbursement for primary care physicians at the expense of high cost speciality care providers. The change in payment philosophy was also intended to have third party payers adopt this new payment scheme as a guide for their reimbursement.

RBRVS implementation began in 1992 and had a five year phase in period. This system started the process of rewarding primary care providers financially for the amount of time spent with patients (Hagland, 1991).

Dr. Hsaio contends that RBRVS's were not intended as a budget cutting tool. In contrast, Congress views the new system as a means for cutting health care expenditures. However, providers were still reimbursed based on cost (Pogue, 1994).

What has occurred in the three years RBRVS's have been in place is the assurgence of health care alliances - from growing numbers of HMOs and Preferred Provider Organizations (PPOs), to vertically integrated health care networks.

3. Health Maintenance Organizations (HMOs)

Health Maintenance Organizations have gained popularity and with them so has capitation. Most of the literature on capitation is obtained by analyzing HMOs. From the increased competition to obtain the premium dollar for health services, HMOs have adopted the capitation philosophy. According to Pogue (1994), "the only way to contain cost is to eliminate the incentive to maximize volume" (pp. 2). Eliminating this incentive is the basis of success for HMOs. Next, Figure 1 shows the typical relationship of supply and demand in a capitated HMO.

a. HMO Capitation

P = Normal Market Price

P' = Capitated HMO price

q = Market quantity

q' = HMO quantity supplied

S = Normal Market Supply

S' = HMO Cost curve
(healthy clients)

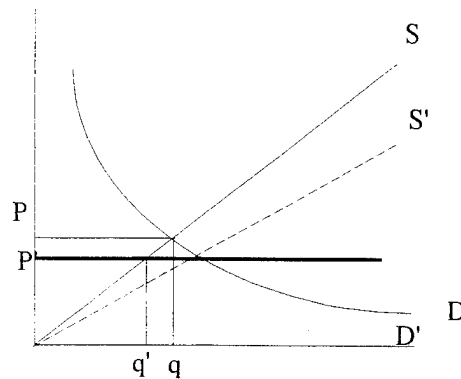


Figure 1. Supply and Demand of a capitated HMO.

In the capitation model among competing HMOs, the fee for comprehensive care is held below normal market price to attract subscribers which is shown in Figure 1. Because they pay a fixed prospective rate, it encourages providers to

offer preventive medical care and primary care before conditions become acute. In this type of setting, physicians have a financial incentive to encourage patients to seek preventive care.

HMOs also pool specialist resources so that their efficiency is maximized for the population they serve. The long run outcome is a healthier client population whose care can be supplied at a lower rate (S')(W. R. Gates, personal communication, May 24, 1995). The long run outcome for providers is reducing cost while maintaining revenues. The long run objective provides incentives to see and treat patients early.

Hospitals control their cost by changing the mix and reducing the level of services. One method HMOs frequently use to reduce the number of visits to the physician's office or hospital is by charging a co-pay. This fee will move D to D'. By charging a co-pay the HMO can theoretically reduce the demand for care. When D rotates to D', quantity of care supplied decreases from q to q'.

Capitation based payment discourages unnecessary treatment and excessively long stays because the hospitals' payment is not linked to the number of admissions or days of care provided. Also, hospitals are encouraged to control increases in unit cost. Dowling (1980) reports one way to contain this unit cost is by changing the patient mix or services provided.

B. CAPITATION

As described earlier, capitation is a payment mechanism in which health care providers are paid a fixed fee per month per enrolled member to cover comprehensive services over a period of time. Providers agree to provide services for this fixed

predetermined payment regardless of how many times the member uses the service (Halvorson, 1993). Also, capitation brings out certain benefits, risks, incentives, and innovations, as well as different rate setting techniques to determine the per capita rate.

According to Feldstein (1988), the following are typical benefits of a capitated system:

- (1) Incentives for hospital efficiency
- (2) Less duplication of services
- (3) Reduced cost of a medical treatment
- (4) Increased physician productivity
- (5) Incentive for preventive care and health education
- (6) Innovation in health care delivery
- (7) Enhanced relationships among provider organizations.

1. Risk Sharing

One of the arguments against capitation is that providers profit by not treating patients (Cave, 1994). This can be dangerous. However, according to Cave (1994), with proper utilization review and peer pressure to provide quality of care, patients are in less danger of not receiving outstanding care.

However, some experts disagree. According to Johnson (1994), the hospital is unlikely to receive the same future capitated rate when they have successfully reduced hospital utilization. Thus, there is no guarantee that capitation will achieve the desired cost reductions nor provide incentives for providers to curb their revenue maximizing behavior.

Dramatically underestimating the cost to provide care to members could bankrupt an organization. This is caused primarily from failing to change old revenue - maximizing behaviors. The new behavior is to operate as cost centers instead of revenue centers.

2. Incentives

As mentioned earlier, capitation pays providers a fixed payment per person over a defined period of time. Capitation offers no incentive to over provide expensive medical care and provides strong incentives toward preventive care (Kongstvedt, 1989). This saves money for the purchasers of health care in the future years.

One of the primary incentives in HMO capitation is long-term savings in acute care, by providing comprehensive preventive care. Capitation creates pressure for the organization to rethink the manner in which they deliver health services. An outcome of capitation, because of the incentive to curb cost, requires physicians and administrators to become more innovative in delivering health services.

3. Innovations

a. Telephone Services

One initiative hospitals can employ is the re-use of the telephone. Jaklevic (1995) states, as the telephone was used to bring patients into the hospital, it is now being employed to keep patients at home. This new system is termed "personal health management" or "decision support." Its mission is to provide information about care to those patients enrolled in their health plans. The goal is to allow patients to call trained and skilled nurses about health care treatments, procedures, health education, and other

questions about their health status. These networks also offer callers over 430 audio tapes on various health topics.

For example, parents with a sick child (non-emergent) may feel uncomfortable about calling a physician late at night or on a weekend. Ultimately, they call or journey to the emergency room. With this phone network, parents can call any time and talk to trained nurses (Personal Health Advisors) who will answer their questions and offer a plan of action.

Yet another example described by Jaklevic (1995), states that Legacy Health system who subscribed to Access Health company's "Personal Health Advisor" in 1993, experienced cost reductions. This system saved an estimated \$2 for every \$1 it cost Legacy, along with 3 percent saved on total expenditures. Even major health care insurers have adopted this approach. For example, Blue Cross and Blue Shield of Oregon reported 7 percent of Medicare and 60 percent of non-Medicare callers were directed to more appropriate and less costly care using a similar system (Jaklevic, 1995).

b. Incentive Pay

Incentive pay is by far the most popular mechanism to reward and motivate providers for preserving an organization's capitated payment (Montague, 1994). At Kaiser, incentive pay is limited to about 4 percent of base salary to prevent potential incentives for under utilization. Kaiser is also considering a merit pay system based on quality, utilization, and collegiality. Their dilemma is how to implement the merit pay system. Another example comes from the Friendly Hills medical group. They established a bonus pool to reward the entire group, rather than individual departments, if overall cost

falls below the capitated target (Cerne, 1994). Under this system, providers understand that the better the organization does, the larger the bonus pools.

4. Rate Setting

There are basically two premium rating methodologies for determining capitated rates, community rating and experience rating.

a. Community Rating

In 1981 the federal government passed legislation which expanded the definition of community rating and introduced the community rating by class (CRC) system. There are three steps involved in a community rating by class. They are:

- (1) Classification of all HMO members into classes actuarially derived or based on factors that can predict differences in utilization of services
- (2) From projected cost of each class, determine the revenue requirements for providing services to members of each class
- (3) Composite premium rate for all individuals in a class or group of similar size

In defining community rated classes, the government allows four factors; age, sex, marital status and type of industry. CRC presupposes the availability of data to develop cost assumptions for each class. This system can be complicated and organizations desiring to implement this system are encouraged to seek professional assistance from a qualified person or firm with expertise in this area.

b. Experience Rating

Insurance companies and most Blue Cross and Blue Shield organizations use experience rating as the principal method for determining rates (Kongstvedt, 1989). This system takes into account previous experience gained by the insurer or health

organization regarding the cost needed to provide care for its members. Rates are adjusted to this factor. The main difference between these two system is that the CRC determines rates prospectively and while experience rating determines them retrospectively.

C. TRANSITION TO CAPITATION

Frank Cerne (1994) states that the transition to capitation begins when an organization rejects the "traditional mind-set of dividing health care into hospitals and physician components" (pp. 29). Capitation is designed to force organizations to examine the entire spectrum of care, not just one component. It requires that systems determine the number of covered lives needed to support the physician's current specialty mix.

1. Key Components to Transition

Kolb & Horowitz (1995) list seven areas which must be in place for an organization's transition to capitation.

- (1) Developing expertise in managed care contracting
- (2) Improving information systems
- (3) Measuring performance
- (4) Enhancing preventive services
- (5) Integrating services
- (6) Creating management incentives for efficiency; and
- (7) Reassessing capital allocation.

a. Developing Expertise in Managed Care Contracting

To determine whether a hospital can be profitable in their region, it first must establish its share of the market (Kolb & Horowitz, 1995). Under a capitated arrangement, the organization (hospital, HMO, PPO, etc.) must determine the specialty mix of providers needed to provide health services in their section of the market. Those services not available directly "in-house" are bought with managed care contracts.

Managed care contracting can place pressure on the organization to provide increasingly more information about quality, utilization and clinical benchmarking. Payers can also request detailed information on "programs to track quality indicators, methods of physician recruitment, credentialing and recredentialing, and patient satisfaction survey methodology and results" (Kolb & Horowitz, 1995, pp. 65). These potential demands on the organization lead to a well established information system or reveal the need for investing in improvements.

b. Improving Information Systems

"Leveraging data to more cost-effectively treat patients is today's new innovation" (Hamilton, 1995, pp. 184). Hamilton states that providers are aiming to cut cost and improve care. The key is better information systems. A vital tool in the transition to capitation is a cost accounting system. According to Kolb & Horowitz (1995), "an organization must know the relative cost of various procedures based on resource utilization rather than antiquated cost-to-charge ratios" (pp. 66).

Rhonda Bergman (1994) reports that knowing your cost is critical because cost over runs place the organization at financial risk. Thus, the hospital must have accurate cost data to function under capitation.

According to Karen Pallarito (1994), Chief Financial Officers must develop new financial indicators to get all health providers thinking as gatekeepers. The shift is away from profit and loss statements by speciality or service. Accurate information should include information on medical service costs and hospital support personnel costs. For example, Pallarito (1994) reports that housekeeping can track the cost per square foot cleaned. With this information, the cost will serve as a benchmark for measuring productivity improvements. This method can systematically be applied to all direct and indirect patient care services in the hospital.

Kolb & Horowitz (1995) state that managers in an integrated system must track patient care "longitudinally" - through entire episodes of care. They further report that few physicians today have information on more than their specific cases. Information on the patient's overall care is not generally available from one data source.

Not only are information systems important for tracking where funds are spent, they are also key to identifying where funds are not spent. For example, Kaiser Permanente, the nation's oldest and largest HMO, recently created a data base to track the health status of diabetic patients. It discovered that the existing health plans did not aggressively send patients for routine eye exams (Diabetes is the leading cause of blindness). By understanding their cost structure, Kaiser was able to identify an internal process which can both save the HMO thousands of dollars and improve the health of its

enrollees. Kaiser plans on systematically reviewing all services to purge inefficiencies. Hamilton (1995) reports that "leveraging data to more cost-effectively treat patients is today's new innovation" (pp. 184).

Integrating systems that capture clinical and financial information is expensive. However, they will ultimately be necessary to extract data to document the cost and quality of care (Kolb & Horowitz, 1995).

c. Measuring Performance

According to Kolb & Horowitz (1995), as managed care plans become more dominant, organizations will compete based on price, quality and member satisfaction. Members are beginning to demand information not only on price but more qualitative information such as quality and member satisfaction data. In order to accommodate, organizations are now developing performance indicators and report cards to document their activities.

At a recent conference in Georgetown, (Conference for Physicians in Managed Care, August 24, 1995) Dr. Cary Sennet, M.D., Ph.D., of the National Committee for Quality Assurance, stated that NCQA developed a Health Plan Employer Data and Information Set (HEDIS) which measures various categories of a health plan. NCQA is pressuring organizations to focus on health outcomes and the inputs needed to generate those outcomes.

There are other organizations which have developed or are developing report cards. By developing performance data reports, hospitals are more in line for the transition to capitation as organization such as NCQA and the Joint Commission for

Accreditation of Healthcare Organizations (JCAHO) require health plans to meet established quality indicators.

d. Enhancing Preventive Services

A prerequisite of transition, as pointed out by Kolb & Horowitz (1995), is enhancing prevention. Through capitation, health care organizations must reverse their logic away from “treating illness to maintaining wellness” (Kolb & Horowitz, 1995, pp. 67). Most fee-for-service health plans do not cover health prevention. Thus, providers had no incentive to provide those services that insurance companies did not reimburse.

Capitation however, creates an incentive for the provider to provide preventive services. Since the amount of payment varies directly with the health of the defined population, providers have an incentive to invest in patient education and other preventive services.

Another aspect of enhancing preventive services is the concept of healthy communities. In defining what is or makes a healthy community, Flower (1994) suggests that people in a healthy community are safe and feel safe, have strong families, a sense of meaning in their lives, are well informed, and feel that they have the power to make choices. Linda Bergthold states that “health is only in a very minor way about medical care” (Flower, 1994, pp. 1.) This is evident in Figure 2 which shows the relationship between the hospitals care and the other contributing factors to “health.”

Prevention and Wellness

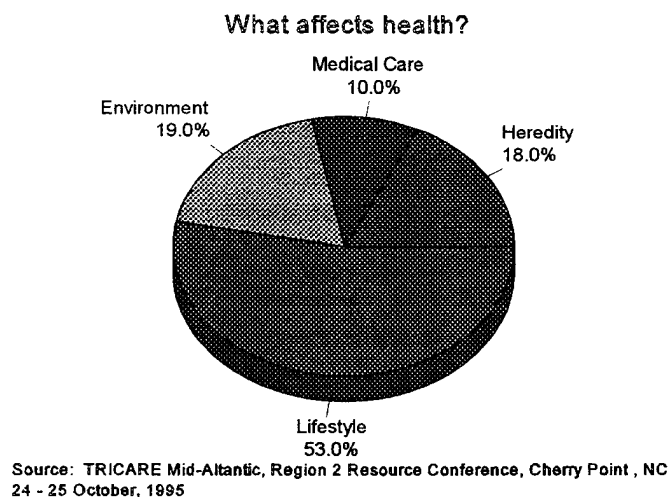


Figure 2. Prevention and Wellness.

As noted by Figure 2, only a small percentage is rooted in medical care. Most of the pie is occupied by what Foster (1994) defines as “social” and what the graph labels as lifestyle. The determinants of the “social” slice include: good housing, jobs, nutrition and education, to name a few. The frame of a healthy community does not rest only within a health care institution. As Foster (1994) illustrates, concentrating a policy to have children immunized is a parochial approach. He states, what good is immunization if children are being killed in gang wars.

Healthy communities involve and depend on inter-connectedness. This inter-connectedness calls for the people of the community to become involved and feel that they have control over their lives. Involving people is not a tactic. It's a holistic approach to the manner in which we all live. Lee Kaiser said it best, “It's [health

community] a gateway to reinventing America and eventually the planet” (Foster, 1994, pp. 11.)

e. Integrating Services

Integrating services refers to the ability of the organization to provide the right mix of care at the appropriate time. To do so, HMOs, PPOs and hospitals need not offer all medical services themselves. If they are able to purchase the service at a lower cost outside their organization, they should do so. According to Kolb & Horowitz (1995) more organizations are diversifying. Organizations “must coordinate the various services patients need and must align incentives to encourage appropriate utilization from all providers” (Kolb & Horowitz, 1995, pp. 67).

f. Creating Management Incentives for Efficiency

Much has been written in this chapter about health organizations creating various incentives to motivate certain desired behaviors. Kolb & Horowitz (1995) argue that hospitals and other health organizations must shift away from “profit centers.”

An interesting term coined by Kolb & Horowitz (1995) describes hospitals as “capitation centers” as opposed to “cost centers.” The difference is that hospitals as capitated centers recognize revenues at the organizational level, not the departmental level as in cost centers.

g. Reassessing Capital Allocation

Organizations must understand that capitation motivates the reduction of inpatient services. Organizations must create a strategic plan which outlines the contingency actions necessary to deal with the reduction in inpatient beds. According to

Kolb & Horowitz (1995), hospitals need to rethink their capital investments to include upgrading information systems, building off-campus ambulatory centers, and most importantly, developing a strong primary care base.

Kolb & Horowitz conclude that comprehensive planning in these seven categories ensures a greater success in the transition to a capitated system. Managing care effectively and efficiently means providing the right care, in the right setting and in the right amount.

2. Helping Ease the Pain

Capitation succeeds in the private market because physicians in successful organizations understand capitation's payment structure. Physicians are generally skeptical of capitation at first because of the reduced payments received per month. However, once they understand that these payments are received monthly, even if the patient doesn't receive care that month, this system becomes more attractive. Also, there are no claims, bills, or stacks of paper work with which to hassle. In the time period it takes to receive a Medicare payment, or partial payment in most cases, capitated monthly payments provide encouragement for physicians.

3. Behaviors

With capitation, certain behaviors emerge (Johnson, 1994). First, physicians are inclined to reduce the hours of operation. There is no incentive to work longer hours 6-7 days per week. The other behavior pattern occurs when payment sources for some patients are greater than the capitated plan. If some patients self-pay or have a more liberal health insurance payment policy, the length of waiting time for capitated patients

increases (Johnson, 1994). The same holds true under the gatekeeper philosophy. If a provider has a nurse practitioner or physician assistant, it will become increasingly more difficult for capitated patients to "clear that hurdle before being seen by the physician" (Johnson, 1994, pp. 69). As Johnson (1994) concludes, taking away the fee for-service incentive also removes the willingness for providers to work longer hours per week, which increases the length of time a patient waits to receive an appointment.

D. MILITARY TREATMENT FACILITY

1. MTF as a quasi fee-for-service

Through this simplified graph (Figure 3), the hospitals with no rate setting constraints would set their rates where TR_b exceeds TC_b by some predetermined operating margin, m_b . If variations occur between expected and actual cost, the hospital would raise their cost to achieve TR_a with the cost curve shifting from TC_b to TC_a . Thus, achieving the same level of operating margin ($M_a=M_b$). This graph assumes that demand is inelastic and with little substitutes available under fee-for-service plans, consumers continued to utilize the hospital, and insurance companies continued to pay.

This is the primary reason why fee-for-service plans with no constraint on rate setting are reported to increase utilization and fail to provide cost containment incentives (Eastaugh, 1992). As once was the story with the MTFs, the greater the volume, the greater the operating margin.

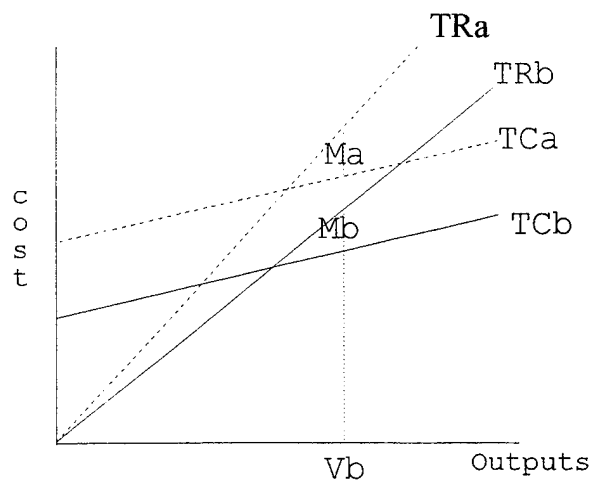


Figure 3. For-profit hospital with no rate constraints.

2. Implementing the Model- the Gatekeeper Concept

The MTF Commander controls his/her cost by using a gatekeeper (Primary Care Manager). A gatekeeper is defined as a provider who essentially controls the level of care given to a patient. For example, a patient must see their primary care provider (gatekeeper) before seeing a specialist under the capitated managed care program. In theory, primary care providers produce care at a lower unit cost than a specialist. Thus, by using gatekeepers and management of health care usage and efficiency, the Commander can earn a "profit."

3. Profits

Profit for a military hospital is a foreign term. To motivate the Commanders to institute the measures necessary to earn a profit (come in below the capitated budget), some type of incentive is necessary. Colonel Douglas Brandel, from the Office of the Assistant Secretary of Defense (Health Affairs), stated that there are few incentives given

directly to the Services for any savings gained under capitation (Personal communication, 1995). However, he pointed out that there are internal incentives the Commander can institute. Additional funding for the next fiscal year can sometimes be earmarked so the MTF can more quickly purchase state of the art equipment as a form of compensation. However, the Commander who produced those savings may not directly see the profits.

Other incentives may include bonuses for civilian government service (GS) employees. Unfortunately, law prohibits the MTF Commander from granting military personnel bonuses. Ultimately the effect of pooled profits and losses, or returning savings to the services, mitigates any profit motives for the Commander.

The savings earned by the MTF are rolled back into their respective services and eventually given to Health Affairs to cover any shortfalls in the Defense Health Program. The goal of reducing DoD's health care expenditure will succeed when the total savings exceeds the total shortfalls. Those MTFs which overrun their budgets are offset by those who save. The next Chapter focuses on the capitated model and framework of the Military Health Service System.

III. CAPITATION IN THE MILITARY HEALTH SERVICE SYSTEM

This Chapter will address the purpose of Health Affairs' capitated model and the environment this creates. Sequentially the process of capitation will be reviewed to include the uniform benefit (TRICARE) and how BUMED's model addresses the transition to capitation. Since information systems are key to financial viability in any system, especially a capitated one, the information systems which support these various components will also be discussed.

A. PURPOSE

In adopting the capitation methodology for payment of health services, DoD is attempting to lower their overall health care cost by mimicking the successes of the growing HMO market. As mentioned in Chapter I, dynamic changes are occurring in health care and health care costs are the focus of Congressional members and committees. As a result, DoD and all health care Departments are adopting capitation, not only to reduce health care spending, but to stay competitive with the private market. Staying competitive translates into keeping some MTFs open and closing some others. The particular methodology the Military Health Service System (MHSS) follows is a clinically based capitated model.

1. Clinical Base Capitation Models

Clinical based capitation models focus on the delivery process. They attempt to understand the underlying production function and the reasons for the treatment variations that occur in a hospital (DoD, CNO, 1993). A clinically based capitation model allows

management to review information to identify those services which are cost effective, and eliminate those which are not. Information is vital for capitation to be effective.

Organizational structures "must" be able to identify variations from the model and take measures to eliminate them (Kolb & Horowitz, 1995). Health Affairs accomplishes this through a three tier model, all driven by a defined user population.

B. HEALTH AFFAIRS CAPITATED MODEL

Health Affairs has established three components for setting the capitated rate. This model is a population driven system (based on users) that is designed to ensure proper funding directly for military unique functions dealing with medical readiness. Category I is for military medical support activities and is not capitated. Category II applies to a small number of military unique medical activities. Category III applies to all CONUS MTFs and contains funding for direct O&M, MILPERS, and the new TRICARE Program. The first component is classified as Military Medical Support.

1. Military Medical Support

Military Medical Support is those services that are non-capitated as well as those services not directly related to the size of military force structure. Category I is similar to "carve outs" established in private health care capitation plans. "Carve out" services are typically those which do not fall under discretionary utilization (Kongstvedt, 1989).

According to Leslie Schneider, managing consultant with Foster Higgins, carve out is the practice of carving out (or separating) a "particular class of health benefits" (Cauldron, 1995, pp.38). For example, US West, a telecommunications company based in

Englewood, Colorado, reduced their mental health cost by 25 percent after carving out mental health from their base health plan.

Carve-outs work in the private sector because high cost specialist are joining forces to provide specialty care at reduced rates. Services such as mental health, substance abuse, and physical therapy are the most common services that are carved out. Increased utilization control is another reason companies carve-out. To ensure employees are receiving appropriate care, employers carve out speciality care to closely monitor utilization.

For the MHSS, the following activities fall under Category I and are not capitated: Armed Forces Institute of Pathology, overseas MTF and dental operations, Aeromedical Evacuation System, Military Entrance Processing Command (MEPCOM), Environmental Restoration/Compliance, and Capital Expense Initial Outfitting. Costs in this category are based on historical cost and adjusted for inflation (Zarkowsky, 1995).

2. Military Medical Unique Capitation Rate

Category II, Military Medical Unique Capitation Rate, reflects those costs associated with mission requirements which are service unique. Activities which support a larger number of active duty military receive an additive value to the capitated rate. Category II is more in line with the size of the military force structure.

Activities in this category include: readiness planing, physiological training flights and labs, military funded emergency leave, readiness exercises and training, veterinary services, optical labs and dental. These are then separated into two sub-categories. Category IIa includes readiness, CONUS dental operations, optical and OM&DA.

Capitation is determined by the number of active duty population served. Category IIb includes education and training.

3. Medical Capitated Cost

Category III is Medical Capitated Cost. This is similar to the rate seen in HMOs and managed care plans in the private sector. Included in Category III are CONUS medical operations and USTF (Uniform Service Treatment Facility). Capitation is based on total beneficiary user population served.

The aggregate of these three components formulates Health Affairs capitated budget. Later in this Chapter, Category III will be described in greater detail. This is the primary category for determining the the Service's capitated rate. Health Affairs per capita rate is as follows:

$$\sum \text{Category 1} + \sum \text{Category 2a} + \sum \text{Category 2b} + \frac{\sum \text{Category 3}}{\text{Defined Catchment Population}} = \text{Capitated Budget}$$

C. DETERMINING THE CAPITATED RATE FOR SERVICE'S

Capitation is predominately found in Health Maintenance Organizations (HMOs). The art of capitation has been used by HMOs since the early 1970's (Jonas, 1986). For Health Affairs the development of the capitation rate is based on average cost (OASD (HA) draft paper, 1993). In other words, total costs are divided by total user population to arrive at a per capita rate. For the most part, Categories I and II do not apply to all MTFs. For those that have activities which fall under Category I and Category II, they are subtracted out of the above calculation.

1. Determining the Denominator (Health Affairs)

The methodology for determining the denominator of the capitation formula is under critical review by the three Services. For Health Affairs, the population is determined by the number of estimated users vice eligibles in the catchment area, based on Full Time Equivalents (FTEs). According to a draft paper from Health Affairs, FTEs were used for computing the capitation rate primarily because some of the eligibles considered by Health Affairs were not actually using the system (OASD (HA) draft paper dated 21 April 1993). The capitation rate for the first trial year (FY 94) would have been inappropriately high using the eligibles as the denominator. Once an enrollment system is developed, actual enrollees will be used to determine a more accurate rate. The Resource Analysis and Planning System (RAPS) is the information system in place to determine the denominator for the three services. BUMED and the other two Services however use eligibles to help transition commands to the capitated system.

a. Resource Analysis and Planning System (RAPS)

RAPS is an on line computer analysis tool of the Defense Medical Information System (DMIS) that provides MTFs and Lead Agents with eligible and user beneficiary population numbers for a defined catchment area (LTC Guerin, 1994). Version 7 of RAPS now accounts for active duty projections based on installation and zip codes from unit level end strength supplied by the services.

Projections under RAPS version 7 allowed DoD to capture and subsequently define catchment and non-catchment areas using a Catchment Area Directory. These definitions reflect planned MTF catchment area closures. For the Navy,

the Surgeon General supplies the projected closures and realignments for the updated Directories.

b. Problems

An important question concerning RAPS is how to account for eligible beneficiaries or potential users of MTF care. For active duty personnel, accounting is relatively simple. However, the challenges lie in accounting for retirees or dependents not stationed with a service member.

If a Commander is held accountable for their capitated budget based on a population driven system, there should be a defined population by which per capita rates are determined. Under a closely estimated system, the Commander holds the risk for management's calculations. For those patients not initially captured in the calculations, the MTF experiences a loss each time they seek care from the MTF. However, this issue is currently being addressed. RAPS is designed for continuous improvements. As capitation unfolds in DoD, and full capitation is approached in the near future (mandatory enrollments), RAPS will be in a greater position to provide the necessary data for increased management support.

c. An Enrollment System

Implementing an enrollment system in DoD conjures many questions. Enrollment systems are designed to allow the purchasers and buyers of health services to calculate the cost of serving a defined population. As noted in Chapter II, Cave (1994) reports better income flow and budgeting practices as a benefit from knowing the population for which the purchaser or buyer is responsible.

TRICARE Prime is the only enrolled program currently in DoD.

TRICARE Extra and Standard are available to all CHAMPUS eligibles but they are not required to enroll. (TRICARE is discussed later in this Chapter.) Areas such as augmenting with the Navy's personnel manpower model, (Total Health Care Support Readiness Requirement (THCSRR)) and establishing a defined health plan has not been determined. This research will not address the framework or implementation of an enrollment system. However, in the private market, enrollment systems are the norm when capitation is the method of payment (Kolb & Horowitz, 1995). This area will again be addressed in Chapter IV to reflect on the incentives created by having and not having an enrollment system. A new concept being proposed by DoD, "Revised Financing" calls for a complete enrollment system. What affect this may have is how well DoD addressed the seven transitional phases Kolb & Horowitz (1995) described in Chapter II.

2. Determining the Numerator (Health Affairs)

The three elements of the Category III costs which comprise the numerator for determining MTFs capitation rates are Operation and Maintenance, Military Personnel and TRICARE. Each are described below.

a. Operation & Maintenance (O&M)

Operation & Maintenance is an account used by activities to fund their base operations, including utilities, facility maintenance, civilian personnel pay and fringe benefits, to name a few. Operation and Maintenance (O&M) is determine retrospectively and inflated to reflect current year rates (Zarkowsky, 1995). The Navy treats infrastructure components as a fixed cost. Direct care dollars are considered variable.

Although some areas of O&M are treated as fixed, the amounts in each category can vary. Fixed cost in this context refers to those cost which will not go away as long as the MTF remains open. Areas such as utilities, communications, and other subactivity groups which support operations are recurring cost but can be monitored through utilization and controlled. For the Navy, BUMED treats this as a part of doing business.

b. Military Personnel (MILPERS)

MILPERS is a significant component in the determination of the capitated rate. Military personnel costs in the aggregate are broken down into two categories: officers and enlisted. This is then adjusted by removing the staff which supports those functions previously identified as non-capitated (Category I). Capitation is determined by the number of active duty officer and enlisted medical department staff. The cost of MILPERS is Service specific to allow for personnel changes, pay raises, and inflation (OASD (HA) draft paper, 1993). These are the people necessary to fulfill the mission of the MHSS and are considered a fixed cost.

D. TRICARE (PROGRAM OPTIONS TO DELIVER THE NEW UNIFORM HEALTH BENEFIT)

1. Purpose of TRICARE

TRICARE is the regional managed care program for DoD members of the uniformed services and their family members, survivors, and retired members and their families. TRICARE is the outcome of a Congressional mandate to DoD. In the Defense Authorization Act of FY94, Congress directed DoD to “prescribe and implement a health benefit option” for eligible beneficiaries under Chapter 5 of title 10, United States code.

DoD's instructions were to develop a program modeled after health maintenance organizations. The model also called for reduced out-of-pocket expense for those enrolled as well as not to exceed the cost of similar health plans found in the private market.

2. TRICARE'S Health Options

The responsibility for implementing the TRICARE program rests with Health Affairs. The management of the managed care contracts is delegated to the 12 Health Service Region Lead Agents. Chapter 1 described the purpose and responsibilities of the Lead Agents.

There are three health care options for CHAMPUS beneficiaries: TRICARE Prime, TRICARE Extra, and TRICARE Standard. TRICARE Prime is the Health Maintenance Organization type option and TRICARE Extra is the Preferred Provider Organization (PPO) type option. TRICARE Standard is the new terminology for the current Standard CHAMPUS Program.

The managed care support contract was designed to provide CHAMPUS beneficiaries with greater accessibility to health care, reduced out-of-pocket costs and increased benefits. Participation in TRICARE Prime and TRICARE Extra is optional. Beneficiaries who are not enrolled as members of TRICARE Prime may continue to receive services through TRICARE Extra from network civilian providers or through TRICARE Standard utilizing non-network providers.

TRICARE Extra is a preferred provider network which reduces the cost share requirement more than TRICARE Standard. In the TRICARE Extra program, when a CHAMPUS eligible beneficiary uses a preferred provider from an established network, care is provided at a beneficial discount, and (usually) no claim forms have to be filed. CHAMPUS beneficiaries do not have to enroll in TRICARE Extra, and may participate in this PPO option on a case-by case basis just by using the providers within the established network. A Standard CHAMPUS beneficiary automatically becomes a TRICARE Extra user when care is rendered by a network provider.

TRICARE Prime is applicable to all CHAMPUS eligible beneficiaries. Key to the TRICARE Prime program is the Prime option, a Health Maintenance Organization, centered around the military treatment facility and a network of civilian providers. This voluntary enrollment option should be very attractive to eligible beneficiaries because it offers the same scope of coverage currently available under CHAMPUS--PLUS the addition of preventive and primary care services--all at a tremendous potential cost savings over Standard and Extra, and it assures access to care.

Prime includes features such as primary care providers, who are responsible for managing the general health care of enrollees and making the necessary referrals for the required speciality treatment. All active duty members will be automatically enrolled in TRICARE Prime, and there are no fees for active duty members and their family members. Enrollees in TRICARE Prime usually have no claim forms to file, and they obtain most of their care within the integrated military and civilian network of TRICARE providers. Additionally, under a "point-of-service" option, Prime enrollees may keep their freedom of

choice to use non-network providers, but will pay a penalty through significantly higher "out-of-pocket" costs than paid under TRICARE Standard.

Besides TRICARE Standard benefits, Prime offers enhanced benefits. They include: periodic physical exams, immunizations, well child care, eye exam and visual acuity tests, discounts for local services and wellness programs, and community resource coordination.

3. Capitation and the Managed Care Contract

In the BUMED capitation formula, MTFs are given TRICARE dollars in their appropriations. Each time the MTF refers a patient outside the facility, it is an expense to the capitation budget. Inappropriate referrals can place a financial strain on the MTF. When referring the patient is more cost effective to the MTF, then the referral should be made. However, referring a patient out does not relieve the MTF of the responsibility for conducting a cost benefit analysis to determine if it is more cost effective to establish those services in-house. In the short run, the Commander must find the combination of services which maximizes efficiency in using the MTF's resources.

Before capitation, Commanders could disengage patients and not directly feel the impact in their budgets that operating year. In the long run, however, the overall BUMED budget would reflect the referrals if this pattern persisted. Capitation changed the manner in which Commanders deal with referrals. Even if the decision is to refer, the Commander is motivated to focus on utilization management and the cost of that referral. Subsequently, the providers in the MTF, through information supplied by management, become more conscious about the referral's appropriateness. Since the Commander is

held accountable for inappropriate use of his fixed resources, the MHSS has provided a few management tools.

The Commander does have some options now under TRICARE, managed care contracts and the uniform benefit. Commanders can require all patients within a certain radius to the hospital, to seek care at the MTF. If a service is not available, care will be arranged by the MTF. This way, the MTF knows exactly where the patient will be seen, and approximately what the cost will be. Naval Hospital Lemoore is doing exactly this. The Commander has directed all patients within a 25 mile radius to seek care at the MTF. The Commander has decided that the MTF will be the primary care manager for that area.

Colonel Brandel also commented that Commanders are not overly discouraged from making a referral as long as it is appropriate for the treatment and care of that patient (Personal communication, August 1995). With the managed care contracts, the Commander now can calculate approximately what the referral will cost.

TRICARE funds were designed to be included in the capitation rate as mentioned above. However, the Office of Civilian Health and Medical Program of the Uniform Services (OCHAMPUS) currently cannot except more than one appropriation from each service (C. Jeffcoat, personal communication, July 1995). Thus, Commanders of MTFs have an incentive to work with the regional Lead Agent in developing referral patterns and the "healthy community" concept. Managed care requires a fully integrated and adaptable mind set. The more knowledgeable "providers" are in the principles of managed care, the

better they are prepared for the transition (Dr. Keill, Salinas Valley Memorial Hospital, Salinas, California, personal communication, November 3, 1995).

In managing TRICARE funds, the Commander is in liaison with the Lead Agent, the specific Service, and even OCHAMPUS. The Regional Lead Agents help coordinate medical care between different Services MTFs. For those services not offered at an MTF, the Commander can seek assistance from the Lead Agent. If there is an MTF in the region to which a patient can be referred, it can be a cost saving alternative. The referring MTF may pay the marginal cost of treating that patient if the receiving MTF cannot absorb the referral in their base. (This concept will be discussed under "Transfer Payments" later in this chapter).

There are two stand out areas which have a strong impact on both how managed care contracts are determined and implemented as well as the tool the MTF Commander utilizes to monitor this component. These two areas are Bid Price Adjustment (BPA) and the Regional Paid Data Management Report. The former is the mechanism for determining payment and the latter the information system to monitor the spending.

4. Bid Price Adjustment (BPA) Formula

Bid Price Adjustment is a formula which calculates the ultimate amount of funds a contractee will receive for accepting a managed care contract. There are many different scenarios which can be played out using BPAs. The main point is that payments to the MTF and the Contractee are adjusted for changes in the total workload. The contractor is responsible for at least a minimum fee to the contractee. Because the contractee gears up resources to accommodate the potential influx of patients, the contractor is responsible for

a portion of these fixed cost. However, the BPA contract is not a fixed fee contract. The government is not obligated or committed to the entire agreed dollar contract amount.

For example, suppose an MTF has an estimated 2000 live births in its catchment area for the year, but can only accommodate 1000. A managed care contract will be established for those 1000 births the MTF can not accommodate. The contractee who accepts the contract is paid based on the amount of work it performs. Thus, if the MTF recaptures a portion of the contractee's 1000 patients, contract payment is adjusted. The opposite also holds true. If for some reason the MTF closed their labor and delivery rooms and the contractee had to absorb the increased patient load, they would also receive an adjustment utilizing the BPA.

For further information and examples of BPA calculations please see Health Affairs' memorandum of 25 July 1994 entitled "Optimizing Resource Sharing Opportunities under Managed Care Contracts."

5. Regional Paid Data Management Report (RPDMR)

This report is the primary tool by which Commanders can track the TRICARE funds being expensed in their catchment area (OCHAMPUS actually paying a claim). This report is maintained by OCHAMPUS and placed monthly on the Data Management Information Systems bulletin board (Jeffcoat, personnel communication, 1995).

For the Navy, Mr. Daniels at the Bureau of Medicine and Surgery, reports that the RPDMR enhances the Catchment Area Billing Report (CABR). The RPDMR provides BUMED and the MTF Commanders with expense data by catchment area showing the benefits being paid by OCHAMPUS.

This report will show the MTF Commander the amount of funds being collected by civilian sector providers for medical services. The Commander monitors this report to determine if any of those services can be recaptured. If possible, the Commander can make trade offs between the MTF's mix of services and the patients referred to managed care contractors.

For BUMED, this report is utilized as a benchmark for establishing a target for CHAMPUS claims based on past performance. The RPDMR produces data by catchment area for a specific time period. If MTFs exceed these targets, BUMED can advise the MTF to take appropriate action.

E. TRANSFER PAYMENTS

Transfer payments are unique to the military and not a factor in private market capitated agreements. This thesis will not show the algorithms used to determine transfer payments. Instead, the conceptual framework of how Health Affairs approaches this issue will be discussed.

Transfer payments are handled at the headquarters level of the three military health services. This avoids having local MTFs reimburse other MTFs for cross overs. (A cross over is where one MTF treats a beneficiary from another MTF's catchment area.) According to LT Pellack (Personal communication, 1995), MTFs have funds in their base to treat a majority of these patients based on their history of referrals from outside their facility. However, if a non-catchment area beneficiary receives care from an MTF that is not included in their base, then a transfer payment will be made. The time interval at which these payments will be made is yet to be determined (i.e., quarterly or annually).

An illustration may be helpful. For instance, suppose hospital A treated 40 patients from outside their base for craniotomy (age 0-17), DRG code 003, with a corresponding relative weighted procedural value of 2.3399 (RWP is defined in the Glossary). They would be reimbursed for this service. Transfer payments work by taking the cumulative relative weighted procedure (RWP) value and multiplying by the adjusted standardized amount (ASA) rate for hospital A. (Each MTF has their own unique ASA rate.) In this case $40 \times 2.3399 = 93.596 \times \$4,382$ (hospital A's ASA rate) = \$410,138. This is the amount reimbursed to hospital A.

The dollar value associated with this ASA is similar to rates developed by the Health Care Financing Administration calculations for CHAMPUS rates (where TRICARE Standard is the option) and Medicare and may not reflect the actual cost incurred by the MTF's for providing patient care. Or for that matter, the payment can be above the MTF's costs. Currently, transfer payments are for inpatient services only.

F. CAPITATION IN BUMED

Capitation in BUMED is structured and approached differently than Health Affairs. Namely, BUMED's uses eligibles as the defined population vice users. The main reason for this departure from Health Affairs is to assist the MTF in the transition to capitation. Changing mind set and practice from a workload based system (known in the private sector as fee-for-service) to even a modified clinical based capitation model takes time.

BUMED CAPITATION MODEL

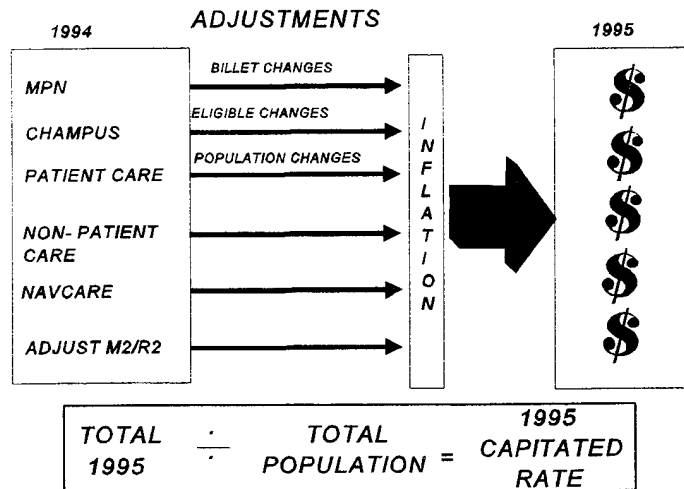


Figure 4. Capitation Budget: Navy Model.

Figure 4 summarizes the process BUMED follows to capitate the funds received by Health Affairs.

G. SUMMARY

This chapter described the various factors associated with the MHSS capitation model and how they are used. A large section of this chapter was devoted to the new TRICARE Program and the managed care contracts established to accommodate those patients outside of the capacity of the local MTF direct care system.

Commanders of MTFs now have certain incentives which emerge from the transition to a capitated system; namely, an increased awareness about the population it serves, the information systems necessary for increased management, and a financial and strategic alliance with the regional Lead Agent. The next chapter will analyze the concept of capitation and the typical incentives available to the MTF Commander for reducing the overall military health care costs and simultaneously maintaining the quality of care.

IV. ANALYSIS

This chapter will discuss the impact capitation could have on the MTF. The primary and subsidiary research questions are revisited. Further topics addressed are: the concept of profits, technical and allocative efficiency, and quality of care. The chapter concludes by stating how the private market approaches each of the above areas.

A. REFINING THE SYSTEM

Bureau of Medicine's decision to adopt capitation financing is one step in the direction toward providing the proper market incentives for balancing service quality and cost. One obstacle to capitation however, is that there is no guarantee that capitation can provide efficiency or effectiveness in the given medical structure. In the micro scheme, one can argue that meeting the budget targets is effective. But in the boarder scope of military readiness and optimal maximization of service provided, long term care may strain the capitated system. Capitation motivates providers to create incentives which focus on a establishing a healthy community. It also shifts inpatient care to outpatient when appropriate. Figure 5 below depicts the typical affect capitation could have on supply and demand. Each curve will be described in detail.

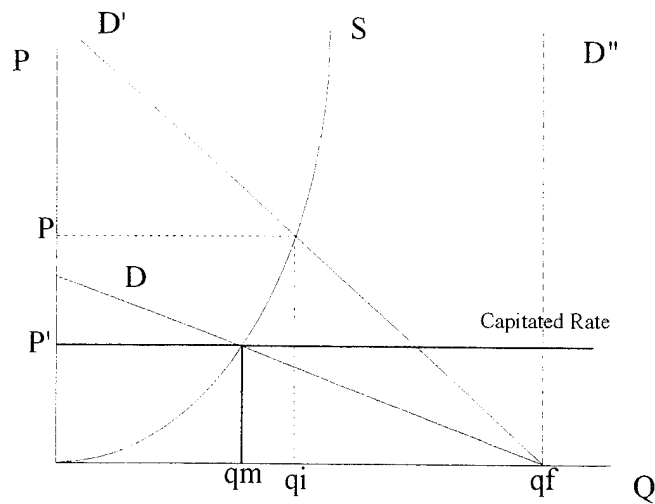


Figure 5. Capitations Affect on Supply & Demand.

B. SUPPLY AND DEMAND AT MTFs

In Figure 5 above, D represents the amount consumers will demand as price varies for health care from the MTFs while D' is the demand for private insurance (TRICARE, Blue Cross, etc., - where patients pay a fraction of total bill). With capitation, if the rate is set at P', the MTF would not want to provide all health care services demanded by the population it serves. To maximize profits, the MTF would only want to provide q_m , where the capitated rate crosses the MTF's supply curve. As consumers pay a smaller share of the health care cost, the demand curve rotates toward D''. In DoD, where consumers receive free care (from the direct care system), the demand curve rotates all the way to D''. Consumers will demand q_f in service regardless of the

cost to provide that service. Some type of referrals are planned to satisfy the demand between q_m and q_f (although kept to a minimum). Capitation would not reduce consumer demand, as long as consumers receive free service. Any reduction in demand would have to be initiated by the MTF through the gatekeepers. Thus $q_f - q_m$ represents the contracts the Government puts in place to handle the demand the MTF cannot absorb (TRICARE.)

The intersection between D' and S is the true equilibrium price for health care (P), with a traditional insurance program (consumer co-pay.) Burden-sharing by DoD consumers, would move their demand curve counter-clockwise from D'' to D' .

The goal of capitation is to motivate MTF Commanders to limit demand, ideally to the intersection of P' and q_m . Thus, all patients are treated in either the MTF or TRICARE and health care costs are lowered. The goal of the Services is to eliminate low value demand while retaining overall health care quality.

C. ANALYZING CAPITATION IN THE PRIVATE SECTOR AND DoD

Capitation has gained popularity with the success of HMOs over the past decade. Most of the literature on capitation, and capitation in DoD, is modeled after a managed care concept or HMO. To understand the potential obstacles in the Health Affairs model, it will be compared to the traditional private HMO. There are two main differences between capitation in DoD and HMOs: profit and determining the capitated rate.

1. Profit

The first main difference is profit. For an HMO, profit is a driving force. When HMOs came storming into the health arena they had to compete with the traditional fee-for-service system. HMOs offered an alternative to the high cost of this traditional service by stressing managed care principles and utilization management. Because capitation was based on a pre-paid plan, the risk shifted to the care giver. To earn a profit, the HMO had an incentive for minimizing costs by reducing future demand for medical services.

In comparison, the local MTFs have little incentive to strive for profits. With the private HMO, profits are retained by the firm. With this profit the HMO can reinvest its retained earnings to improve the facilities and training, to pay providers bonuses, hire additional staff and so on. The MTF is quite different. Any funds remaining in the MTFs Annual Planning Figure (APF) are rolled back to the respective Service. A majority of these funds are used to cover other activities or accounts which are short of their operating targets. If profit is the primary motivator, neither the Commander of the MTF nor the providers have any direct incentive for containing cost.

2. Determination of Capitated Rate

The mechanism to determine the capitated rate is the second difference. For the private HMO, rates are determined by the market. For example, suppose the going market price for other health care delivery systems is \$90 per member per month. The HMO must meet or beat this capitated rate to be competitive. Again, the HMO controls

its cost through utilization management. They accomplish this through a gatekeeper and utilization management review. Their focus is on preventive care through annual physicals, immunizations, and patient education. By having a better informed consumer, the patient can control their health status and reduce the cost to the HMO (Montague, 1994). Any cost reduction beyond the capitated rate increases the HMO's profits, but does not affect its future capitated rate. That continues to be determined by the market (the HMO's competitors).

By contrast, DoD capitation still uses historical cost to determine the capitated rate. The rate for the hospital, as mentioned earlier, is determined by many factors. Any profits made this fiscal year could affect next year's rate. As Johnson (1994) argues, savings generated this year could translate into a reduced rate next year. With HMOs, a small part of the capitated rate is based on historical cost. However, the primary mechanism is determined by the actions of competitors, namely their rates. Thus, rates are set by the market. Thus, HMOs can take advantage of any technical and allocative efficiency gained over the years. As long as the capitated rate is based in part on historical cost, MTFs have a mixed incentive to reduce costs and increase efficiency. Increasing efficiency improves their ability to accomplish their military mission, but it makes their future jobs more difficult by lowering their future capitated rate.

3. Patient Satisfaction as a Means to Measure Quality

The last main difference is maintaining patient satisfaction. Reducing the demand for services is a key management strategy for HMOs. However, if quality of care is poor or perceived poor by the patients (consumers), they will seek care elsewhere. The HMO may not immediately feel the financial effects from providing poor quality (as defined by patient satisfaction surveys). However, once the pre-paid contract ends, the HMO is left with fewer patients to offset their fixed cost. There is an incentive to maintain and provide high quality care. Those providers who do not will lose patients and go out of business.

For example, consider waiting time. If the waiting time for appointments or to have a prescription filled becomes excessive, it reduces the consumers perception of quality of care. In the private sector, patients can change HMOs if waiting time becomes excessive. In the MTF, this option is limited, particularly for those members who have the MTF as their PCM. Thus, there is less incentive to address excessive waiting times.

In a step to outline the requirements for patient satisfaction, TRICARE established baseline requirements for delivery of care. They are:

- (1) Travel time should not exceed 30 minutes for the home to delivery site
- (2) Emergency services shall be available and accessible within the service 24-hours a day, seven days a week
- (3) The wait time in the office in non-emergency situations shall not exceed 30 minutes, and

- (4) They shall have access to PCM services on a same day basis (OASD memorandum, Uniform Access Requirements for Primary Care Managers, 30 August 1995.)

Since these requirements are what Health Affairs established for civilian contracts, this would be a good place for the MTFs to begin. Without options, it is unclear how DoD in a non-market capitation setting can motivate the MTF to be responsible to customer satisfaction issues.

4. Technical and Allocative Efficiency

Two categories of efficiencies emerge from this capitated system - technical and allocative efficiency. Technical efficiency involves identifying the mix of inputs (capital, labor, etc.) that provide a given quality of care as inexpensively as possible (W. R. Gates, personal communication, October 5, 1995). Allocative efficiency involves the mix of services provided. Allocative efficiency involves identifying the mix of services that have the highest net value and can be provided less expensively through the MTF than through private providers. HMOs must maximize technical and allocative efficiency to earn a profit, remain competitive, and maximize the value of their health care expenditures. By reviewing the literature, BUMED's capitation model is a transitional model which is preparing the MTFs for the next level - full capitation and risk sharing.

a. Allocative Efficiency

Eastaugh (1992) defines allocative efficiency in health care as "determining from among which inputs the allocation of resources would be least costly for achieving an improved level of output (health status)" (pp. 15). According to Gates and Terasawa (1995) allocative efficiency doesn't require zero profits. Zero economic profits indicate that a firm is earning the minimum amount of profit necessary to keep it in business. Gates and Terasawa (1995) state that profits in the short run are an indicator of whether to expand or contract operations in the long run. Thus, the constant short run fluctuations in profits "will tend to zero" (Gates & Terasawa, 1995). This occurs where $MC=MB$ (where MC is determined by opportunity cost).

Gates and Terasawa (1995) list the conditions that lead to allocative efficiency in a private market as: individual producers retain profits, producers are price takers, and supply equals demand. In the civilian market the intent behind capitation is that hospitals are allowed to retain profits. This gives hospitals the incentive to maximize allocative efficiency and profits.

b. Technical Efficiency

Technical efficiency refers to the relationship between inputs and outputs, irrespective of cost (Eastaugh, 1992). Maximum technical efficiency has been achieved when the amount of input cannot be reduced and still produce the same amount of output.

Gates and Terasawa (1995) define technical efficiency as "minimizing production cost at the current output level" (pp. 9). MTFs earn a profit by maximizing technical efficiency.

In summary, according to Gates and Terasawa (1995), providers will minimize the cost of providing a particular service to achieve technical efficiency.

Technical efficiency must be maximized for administrators to maximize their profits.

Allocative efficiency for administrators is providing the right mix of services that maximizes the value produced by the MTF (pp. 7.)

D. MARKET APPROACHES

With all the resources devoted to capitation, it would appear easier to take the market HMO rate and use it as the MTF capitated rate. The rationale to this concept is simple. If the MTF cannot provide a particular service, patients would journey to the private sector to receive care. The cost for that service would be equal to the MTF rate. The MTF would not lose any additional revenue for that patient. For the MTF, BUMED and ultimately DoD to be successful and meet its goal of reducing the level of health care expenditure, adopting the market rate approach provides a better reflection on the cost of providing care to the patients in that area.

E. SUMMARY

Capitation provides many incentives on which private HMOs have capitalized. The MTF Commander is transitioning from the world of workload based reimbursement to fixed fee capitation. In this transitional period, there are improvements to be made.

One improvement is streamlining the information systems to provide better data on the critical or core competencies necessary for capitation. At the core is a cost accounting system. Reviewing the seven components Kolb and Horowitz (1995) described in Chapter II, positions the MTF to take advantage of opportunities presented. A case can be made, however, that military facilities have a cost advantage over TRICARE providers. If effectively managed, they could produce savings. Since a large portion of the military medical system (buildings, personnel, equipment, etc.) is in place due to mandated readiness for direct care (sunk cost), the marginal cost to expand coverage to dependents, retirees, etc., should be less than the cost of TRICARE provided care.

Figure 6 represents the MTF capitation model. The capitated rate is the MTF's revenue. At the rate CAP, the MTF will break even if it provides the level of service equal to Q_T (where the capitated rate equals ATC). The Commander can be considered as attempting to maximize profits. To accomplish this they will motivate providers to reduce the level of service below Q_T . As they reduce the level of care, the Average Total Cost (ATC) for the MTF decreases - resulting in higher profit. Alternatively, the MTF Commander can encourage providers to increase technical efficiency (i.e. reduce the ATC curve to provide the same level of care at a lower cost). However, if the capitated rate is based on historical costs, and is allowed to fall as service level falls or efficiency increases, the MTF will have less incentive to increase efficiency or economize on the service provided.

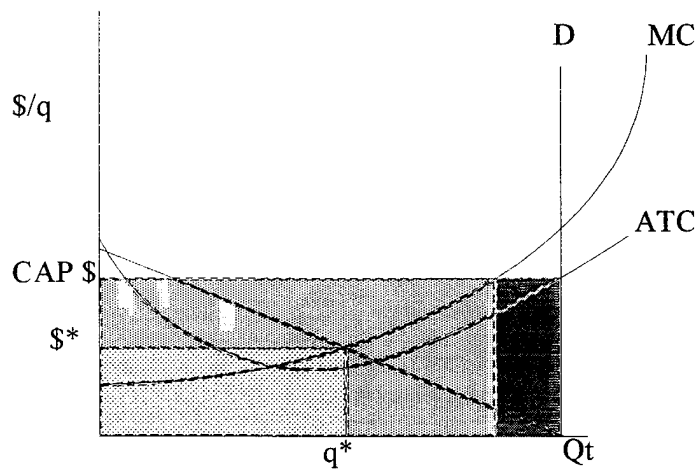


Figure 6. MTF Capitation Model.

Figure 7 reflects the amount of services provided by the MTF (q_m) and the amount provided by TRICARE (q_c). Ideally, the MTF would provide care where the $MC_{MTF} = MC_{TRICARE}$. In the current system, it is unclear whether MTF Commanders have the incentive or information necessary to find this efficient mix of care between the MTF and TRICARE.

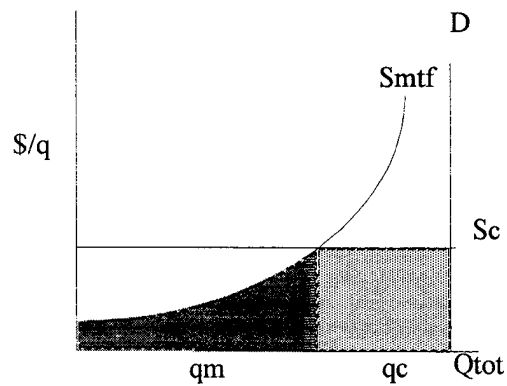


Figure 7. Ideal Allocation of Provider to Patient.

V. CONCLUSION

This chapter summarizes the impact capitation based resourcing could have on the MTF.

A. SUMMARY

Health Affairs has recognized the lack of "financial incentives for the MTFs to participate in resource sharing" (this concept is defined in the Glossary) (OASD (HA) Memorandum, 25 July 1994). The savings associated with these resource sharing agreements are viewed in terms of government savings rather than MTF savings. With the current budget and appropriation processes, it is difficult for the MTF to receive direct benefits from prudent management. In private capitated plans, providers receive any profits earned at the end of the agreement period. Under their market structure, reducing utilization of service has strong financial incentives to the providers. As Health Affairs stated, (Memorandum, 1994) the goal is to reduce the overall government cost of delivering care, that is to find the "global optimum" of providing services not the "local optimum."

In finding the global optimum, Health Affairs must be committed to long term planning. However, the appropriation process and DoD are forced to focus on short run results. As pointed out by Cave (1994), capitation is not a short term program. Cave further states that capitation is usually the vehicle for change. In that vein, the budget process is an opportunity for improvements related to Defense Health Program appropriations.

Capitation works in the HMO market because economic forces are at work. The provider has incentives to provide quality health care, early, and as efficiently as possible. The customer is enticed by an attractive price, and by insurance rules. Military medicine is more politically driven than market driven. Unless there is a fundamental change in cost-burden sharing of those covered, the demand curve for health care will remain steep and inelastic. DoD has countered the concern by establishing the TRICARE program which has cost sharing by the enrollees. Navy medicine has started the process with the THCSSR to streamline the operational billet structure and force mix. These processes are a product of the reengineering processes at BUMED.

However, there is still the issue that military providers are not market motivated to invest in the long-term benefits of a healthier client base. Since costs to the military health consumer are basically the same for treatment in a military facility or a TRICARE provider, there is little incentive to choose the least expensive option. Capitation in the military, without addressing the transitional components mentioned in Chapter II, boils down to an arbitrary re-allocation of the budget which does little to change the providers' incentives. Capitation puts cost control at the forefront for the MTF (with a disincentive for operating at a loss), but provides a mixed incentive to reduce costs (no profit retention and lower future capitated rate). To the extent MTFs try to control costs, capitation causes each customer to be viewed as an expense to be minimized, rather than an opportunity to improve health.

In the literature, education is paramount for capitation to succeed (Cerne, 1994; Kolb & Horowitz, 1995; and Johnson, 1994). Education covers not only the providers

who deliver care but the consumers who receive and purchase the care. Once the foundation is made, periodic refreshers promote wellness throughout the organization, externally and internally.

DoD has not found an optimum mechanism to provide the MTF direct benefits for cost containment. This is still in a transitional phase. Until the Commander has autonomy and control over resources and faces the incentives capitation provides in the private sector, then DoD has primarily allocated less funds to the MTF and increased their responsibility, but not their authority or control.

However, there are remedies to the system. Kolb & Horowitz (1995) labeled them as components to transition. The transition involved seven criteria as mentioned in Chapter II. Areas for improvement in military medicine are the Management Information System and Accounting structure. Capitation's foundation is built on accurate knowledge of costs and the demographics of the enrolled patients. Understanding cost is critical to efficient allocation. Understanding incentives is critical to affecting behavior. Currently, there are a number of information systems which gather data in military medicine. Cave (1995) stressed the need for a fully integrated system which contains all relevant information critical to the success of the organization. CHCS was designed as Health Affairs integrated system. Only time will tell if it captured the critical elements needed for capitation.

Outcomes are critical in order to preserve high quality care, prevent underutilization and encourage preventive care. Emphasizing outcomes and preventive care is the right thing for the patient and it will mean lower expenditures for BUMED in

the long run. Halvorson (1993) stresses this point over and over. Focusing on health outcomes is what is needed and according to Halvorson, we must stop “trolling for warts.” Trolling for warts is where physicians look for other procedures they can do when patients come to see them.

Bisbee and McCarthy (1993) argue that for organizations to become more fiscally and medically viable, they must design a coalition of all individuals responsible for making resource allocation decisions. These individuals need access to appropriate administrative and medical data.

MTFs have operated in the past by attempting to achieve technical efficiency. However, allocative efficiency is a new concept for the MTF. To be successful under capitation, the MTF should strive to achieve both technical and allocative efficiency.

B. AREAS FOR FURTHER RESEARCH

Up into this point little has been mentioned about merging a capitated system with the three missions of the medical department. The implementation and impact of the THCSRR on the delivery of care is yet to be seen. With six fleet hospitals augmenting various MTFs for peace time assignment, the mix of those MTFs will be quite different than other MTFs around the world. When those fleet hospitals are activated, withdrawing staff places a tremendous strain on that MTF.

BUMED has stated that implementing the THCSSR will be difficult. A more in-depth exploration of how a new policy will be implemented is needed.

Other areas for further research are:

- (1) Determine if capitation based resourcing reduced the over all DoD health care cost.
- (2) Determine what economic incentives the Commanders of MTF utilized to motivate providers to reduce costs.
- (3) Determine if the MTF achieved technical and allocative efficiency.

C. CONCLUSION

David Whipple (1977) states that members of a health care team must be rewarded for their contributions to the organization and subsequently offered inducements. The primary mode to compensate military providers is their salary. A straight salary only pays for minimum productivity and minimum innovation. Management, in order to align organizational goals with organizational member goals, has to motivate team members to adopt the philosophy and direction of the firm. According to Whipple (1977), BUMED must be willing to provide the opportunity for the MTF (and the staff) to benefit from the acceptance of the additional risk of a capitated environment.

Capitation alone is not significant enough to produce the savings BUMED, Health Affairs, nor Congress desires. There “must” be an organizational shift, a focused vertical integrated network which places the overall episode of care to the forefront. Relying solely on the perceived outcomes capitation can bring, will not only leave BUMED in a difficult position, but affect the entire MHSS system as well.

I agree with Dr. Whipple that BUMED, Health Affairs, and DoD must go beyond the current framework of the incentive structure. There is an opportunity to break new

ground, an opportunity to take a step forward, and an opportunity to be the leader in health care delivery.

We must not ignore reality - there is a self-interest of the organization and its members. BUMED must create the environment which fosters goal concurrence.

The following article was published in the September-October 1994 issue of "Navy Medicine".

The THCSRR Model:

Determining Navy Medicine's Readiness Manpower Requirements

LT Timothy H. Weber, MSC, USN

As budgetary and legislative pressures continue "rightsizing" the Navy, Navy Medicine has responded by developing the Total Health Care Support Readiness Requirements (THCSRR) model. This model allows Navy Medicine to accurately determine, and project, its active-duty manpower readiness requirements, to the subspecialty level, based on the two readiness missions of Navy Medicine: wartime and day-to-day operational support to the Fleet and Fleet Marine Force.

NAVY MEDICINE'S MISSIONS

Critical to understanding how Navy Medicine defines its manpower readiness requirements is an understanding of the three missions of Navy Medicine.

- 1. Wartime Mission: To meet wartime demands for medical care in a scenario defined by two nearly simultaneous major regional conflicts (MRCs). This mission includes mobilizing two hospital ships, supporting the Fleet and the Marine Corps' operations ashore and afloat, numerous fleet hospitals, and maintaining OCONUS MTF/DTF structures.
- 2. Day-to-Day Operational Support Mission: Provides active-duty Navy personnel, or "blue suit" personnel, to support the Fleet, Fleet Marine Force (FMF), and OCONUS MTF/DTFs, on a daily basis. This mission is supported by a CONUS rotation base allowing Navy Medical personnel to rotate to and from operational platforms and overseas assignments.
- 3. Peacetime Health Benefit Mission: Provides health care for 2.5 million beneficiaries through the direct care and CHAMPUS systems.*

While all three missions are imperative to Navy Medicine, the first two, the wartime and day-to-day operational missions, determine the number of active-duty Navy personnel in uniform. It is only because of these two missions that Navy personnel are available to support our third mission, the peacetime benefit mission, providing medical and dental care in our CONUS MTFs and DTFs.

MODEL BACKGROUND

The impetus for the THCSRR model comes from the fiscal and legislative pressures placed on the Department of Defense to "rightsize" the total force structure. Specific pressures faced by Navy Medicine come from a study of the military health services system (MHSS) and the MHSS's wartime manpower requirements. Conducted by the Office of the Secretary of Defense, Program Analysis and

Evaluation, this study, commonly called the "733 Study" due to its origination in Section 733 of the 1992 National Defense Authorization Act, was to determine the total medical care requirements needed to support all three services during a post-Cold War wartime scenario.** Inclusive in the 733W Study's requirements are the number of Navy Medicine personnel to man theater operational platforms (e.g., fleet hospitals and hospital ships) and provide a force structure that allows for echelon 1 and 2 care, OCONUS MTFs/DTFs, Research and Development activities, continuous training (trainers only), and headquarters staffs (e.g., CINC, BUMED).

The report from this study conjectured that as the number of active-duty personnel are drawn down, so too should the level of wartime medical manpower requirements decrease. In other words, the three service's medical manpower requirements for the two MRC scenarios were significantly reduced from the prior global wartime scenario.

To adequately assess the manpower readiness requirement to support the day-to-day operational mission, the Surgeon General of the Navy, VADM Hagen, asked the Center for Naval Analyses (CNA) to conduct a study to examine the manpower requirements needed for the day-to-day operational mission. This study, titled "Measuring the Impact of the Navy's Downsizing on Medical Officer Billets," included defining the requirements for Navy Medicine's mission to support the Fleet, FMF, OCONUS MTFs, and the isolated (ICONUS) MTFs at Twentynine Palms and LeMoore: all platforms where only active-duty Navy personnel can perform the medical mission. This study, completed in March 1994, incorporates the requirement for a rotation base, in accordance with BUPERS policy.

THCSRR MODEL

While both the 733W and the CNA studies examine different aspects of Navy Medicine's overall mission, neither combine the wartime and the day-to-day operational missions into a single manpower requirement. Consequently, VADM Hagen tasked his POM (Program Objective Memorandum) Fiscal Year 1996 Medical Assessment Task Force (PMATF) to develop a single manpower readiness requirement model that would incorporate the 733W and CNA studies. This model is now known as the Total Health Care Support Readiness Requirement (THCSRR) Model, and is currently being used to portray the active duty manpower needs of Navy Medicine for fiscal year 1999. In addition to the development of the THCSRR, the PMATF created an allocation model that allows Navy Medicine to distribute the THCSRR's "blue suit" requirements to support the peacetime health benefit mission.

Fundamentally, the THCSRR Model has two main components. The first component derives active-duty manpower readiness requirements necessary to complete both wartime and day-to-day operational support missions. The second component programs the sustainment requirements needed to maintain the readiness manpower requirements for future years.

To arrive at the THCSRR the first component is obtained from a union*** of the manpower readiness requirements, denoted in both the wartime and day-to-day operational studies, at the subspecialty level. This union is known as the Medical Operational Support Requirement (MOSR). The MOSR is created by combining two data bases. The first data base included active-duty requirements from the 733W Study. The second data base included active-duty requirements from the CNA Study (this includes the rotation base needed to support this operational requirement). A union of the requirements from these two studies results in a third set of requirements that define the minimum number of fully trained active-duty personnel required to accomplish both missions. Figure 1 shows the union of these data bases.

Medical Operational Support Requirement



- **Union of Both Sets**
- **Maintains Unique Requirements**
- **Eliminates Redundancies**

Figure 1

A hypothetical example of this union of the 733W and CNA studies is given below. If there is a wartime requirement for 100 hospital corpsman Operating Room Technicians (OR Techs), but there is only a day-to-day operational requirement of 70 OR Techs the union of these two requirements is 100 OR Techs. (Note: the day-to-day operational mission requirement includes a rotation base.) By creating a union of these two different requirements the resultant 100 OR Techs are the minimum number of OR Techs necessary to meet the requirement of either mission.

In creating such a union, several problems involved with determining manpower requirements are solved. First, a union eliminates redundancies. For example, if the requirements for the 100 and 70 OR Techs were added together, to equal 170, Navy Medicine would have 70 extra OR Techs with the same skills, doing the same job. Second, a union allows for the maintenance of unique requirements to be filled since the union is created at the subspecialty level. (For example, the union of A,B,C,D, described in footnote 1, maintains the unique requirements of the first data set, A,B,C and the second data set B,C,D.) Third, a union creates a credible argument for the needs of Navy Medicine's manpower readiness requirement. As such, Navy Medicine has for the first time, through the MOSR, validated the true manpower readiness requirements to support the entire readiness mission.

Once the MOSR has been defined the second component of the THCSRR Model was determined by quantifying a sustainment requirement for the MOSR. Sustainment requirements allow for a continuous flow of qualified personnel into MOSR specified jobs as people attrite either from the Navy or from their current skill level and move to a higher skill level. The sustainment requirement, therefore, is the calculated number of billets required for officers and enlisted in training and must be added to the MOSR. To demonstrate the need for sustainment the hypothetical OR Tech example is used again. The MOSR for OR Techs was 100. If the attrition rate for OR Techs is ten percent then Navy Medicine must replace those ten OR Techs ($100 \times 10\% = 10$) in order to "sustain" the MOSR. By adding the MOSR (100) and the sustainment pieces (10) together the THCSRR is complete and equals 110. Therefore, adding the MOSR and the sustainment pieces together, as shown in figure 2, completes the THCSRR Model and

provides the total active manpower readiness requirement for Navy Medicine.

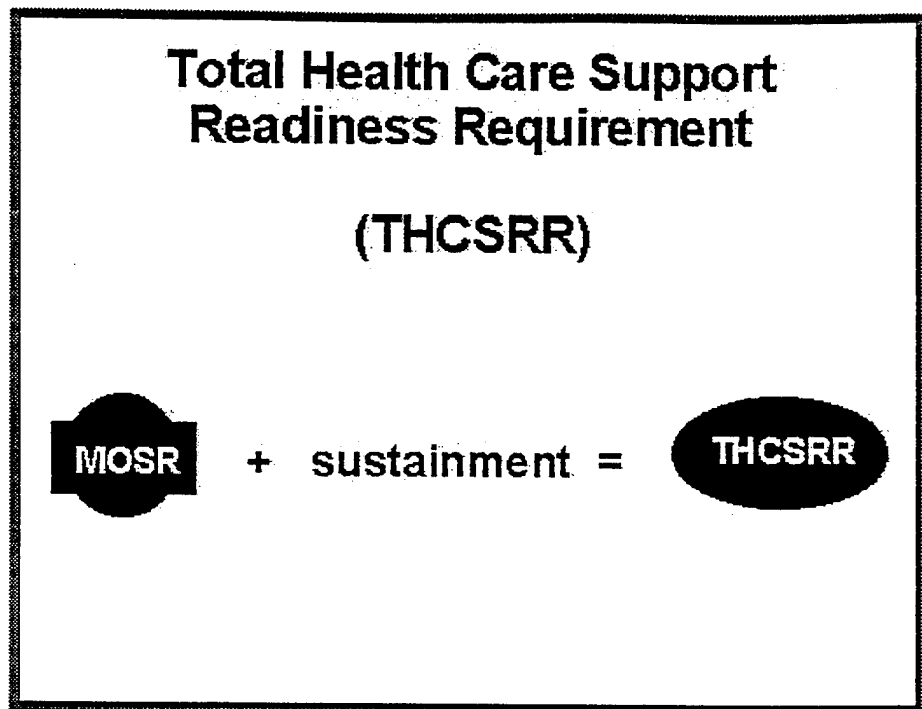


Figure 2

ALLOCATION MODEL

The PMATF, in addition to developing the THCSRR Model, created a second model to allocate the calculated manpower readiness requirements in accordance with mission priorities. The first missions filled by the THCSRR are the "fact of life" missions of Navy Medicine: support to the Fleet, FMF, OCONUS/ICONUS MTFs and DTFs. Listed in fill order are the remaining mission priorities: Headquarters and Support Activities, primary centers of operational missions, primary centers of medical training, primary centers of fleet/FMF training, and other mission support activities. The prioritization of these missions is essential since the THCSRR Model has defined a new manpower readiness requirement to accomplish both of the readiness missions.

BENEFITS OF THCSRR

There are three primary benefits to the THCSRR model.

- Benefit 1: The THCSRR model is dynamic. By basing manpower readiness requirements on the wartime and day-to-day operational missions, both of which are defined by DoD and have certain platforms attached to each mission, the THCSRR model is able to accommodate any changes made to these missions. For example, if the DoD determines that there needs to be one less operational platform or OCONUS MTF, the THCSRR Model output from the model will produce a new set of manpower requirements that reflects the effects of subtracting this platform, and, if applicable, the associated rotation base.
- Benefit 2: The THCSRR Model illustrates impact of changes to mission priorities. The THCSRR Model has the capability to demonstrate the impact/change of reconfiguring Navy Medicine's mission

priorities, as defined in previous section. The ability to demonstrate such impacts is a beneficial and useful strategic manpower management tool for planning in the future years.

- **Benefit 3: THCSRR Model's Requirements are Valid.** Subspecialty-level union of wartime and day-to-day operational mission requirements allows Navy Medicine to have credible requirements to present to DoD and congressional manpower experts. By achieving such credibility, as well as being the first of the military services' medical department to have such a requirements model, Navy Medicine is able to demonstrate true "blue suit" manpower requirements.

THCSRR EXECUTION

While Navy Medicine has gained the ability to define the most efficient and effective mix of "blue suit" manpower readiness requirements, full implementation of the THCSRR will not be without challenges. Navy Medicine is driving towards total THCSRR implementation by FY 99. The complexities of contractual reviews, data entry into the Total Force Manpower Management System (TFMMS), training pipelines, and personnel planning, to name a few, require dedicated effort over the next five years to ensure Navy Medicine will be able to meet its readiness mission.

* The manpower requirements needed for the peacetime health benefit mission are determined by the Efficiency Review (ER) process. This is in contrast to the THCSRR model which determines the manpower readiness requirements.

** The 733 Study was actually a two part study. One part examined the peacetime requirement while the other part examined the wartime requirement. This article places a "W" after the number 733 to denote that it is speaking of the wartime portion of the study.)

*** An example of a union: Data set one consists of the letters A,B,C. Data set two consists of the letters B,C,D. The union of these two sets is A,B,C,D, not A,B,B,C,C,D.

If your command would like a detailed briefing on the THCSRR model, please contact the N-931 staff at DSN 227-1494 or Commercial 703-697-1494.

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GLOSSARY

Adjusted Standardized Amount (ASA) - This is a rate determined by the Medical Treatment Facility as their standard cost for reimbursement. The ASA per relative weighted procedure for the sue in the direct care side of the MHSS is comparable to procedures utilized by Health Care Financing Administration and CHAMPUS. The ASAs represent the adjusted operating costs for treating all beneficiaries in the direct care system in all DRGs. The ASAs include all expenses associated with Category III activities under capitation budgeting. Health Affairs publishes the notional transfer payment price per RWP by MTF each January. (OASD(HA)), Policy Guidelines for transfer Payments, June 13, 1995).

Capitation - A payment mechanism in which health care providers are a paid a fixed amount of money each month per enrolled member to cover services over a period of time. The provider agrees to this fixed predetermined fee, regardless of how many times the member uses the service. The rate can be fixed for all members, or it can be adjusted based on factors such as the age and sex of the members, based on actuarial projections of medical utilization (Halvorson, 1993).

Co-payment - A fixed dollar amount per service that is the responsibility of the beneficiary (Halvorson, 1993, pp.238).

Fee-for-Service - A system of paying physicians for individual medical services rendered, as opposed to paying them by capitation or salary (Halvorson, 1993, pp. 234).

Gatekeeper - The primary care health plan physician who must authorize all medical services, e.g., hospitalizations, diagnostic work-ups, and speciality referrals, as a condition of those services covered by the plan (Halvorson, 1993, pp. 234).

Health Maintenance Organization - A generic set of managed medical care organizations that deliver and finance health care services. HMOs provide comprehensive health care services to enrolled members for fixed, prepaid fees (premiums) (Journal of Accountancy, April 1995, pp. 69).

Preferred Provider Organization (PPO) - A financing arrangement in which networks or panels of providers agree to furnish services and be paid on a negotiated fee schedule.

Providers - The individuals or institutions that actually deliver health care goods and services. In other words, doctors, hospitals, nurses, medical laboratories, and the like (Global Finance).

Relative Weighted Product - A numerical weight assigned to a diagnosis to properly measure the severity of diagnosis and subsequent treatment with the time spent per patient. This is similar to cumulative lab values (CLVs) and cumulative time values (CTVs) used in military dental commands. RWPs along with ASAs are used to calculate Transfer Payments.

Resource Sharing - MTFs may establish resource sharing agreements with the applicable managed care support contractors for the purpose of providing for the sharing of resources between the two parties. Internal and external resource sharing agreements are authorized. Under internal resource sharing agreements, beneficiary cost sharing requirements are the same in MTFs. Under internal or external resource sharing agreements, an MTF commander may authorize provision of services pursuant to the agreement to Medicare-eligible beneficiaries, if this will promote the most cost-effective provision of services under the TRICARE Program (Definition taken from Health Affairs Home Page (Internet), Provisions of the Rule Regarding the TRICARE Program, Section H (Resource sharing agreements (section 199.17(h))).

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